Volume 16, No. 2 **February, 1965**

PILOT TRAINING SCHOOL UNDER WAY

A commercial pilot training course is being conducted at the Helena Airport under the sponsorship of the Helena Senior High School's Department of Aeronautics. This course is a federally funded Manpower Development and Training course which is a vocation program operated jointly by the Employment Service and the State Department of Public Instruction.

All students are selected by the Employment service with eligibility limited to an employment circumstance, near 21 to 27 years old, in top physical condition and to have two years of college as a minimum scholastic achievement. Selection is as near airline standards as possible and it is the object of the course to prepare students to surpass airline hiring minimums.

Upon acceptance of the flight program by the Trustees of the Helena School Board, bid requirements were released to those qualified at the time of bid opening to give instruction by being in possession of the proper F.A.A. certificates. Morrison Flying Service in Helena negotiated a successful bid and started flight training on the week of January 4th, 1965.

This program has the following students enrolled as of January 25, 1965:

Flight School Trainees and Instructors.

Larry Ashcraft—Helena
Jim Bellmore—Kalispell
Jared Brandt—Havre
Mike Buckley—Missoula
John Chase—Butte
Carl Christianson—Billings
Ted Higgins—Great Falls
Roger Jones—Helena
(Rodger) Neil Kent—Ennis
William McDaniel—Great Falls
Blake McDowell—Chester
Doug McLaren—Missoula
Kenneth Risley—Great Falls
David Rolczynski—Missoula
Jerry Udelhaven—Lewistown

(Continued on Page 3—Col. 1)

Official Monthly Publication of the

MONTANA AERONAUTICS COMMISSION

Box 1698
Helena, Montana

DIRECTOR'S COLUMN

AIRWAY BEACON RELOCATION PROGRAM

Airport Beacons in the State of Montana as of January 1, 1965, number 52. Of these beacons, two are situated on Air Force Bases, 50 are owned by counties, municipalities or airport boards and are situated in most cases on municipal airports.

As of the above date, the Federal Aviation Agency owns and operates 39 airway beacons in the State of Montana, one of which is situated on a municipal airport.

The Federal Aviation Agency proposes to decommission, from time to time, up to 12 of these airway beacons on which no particular justification has been forthcoming for their retention. It is conceivable that a number of these locations do not have a particular need as a navigational facility for night VFR operations and it has been further determined that specific locations are not of sufficient value as a visual check for ceiling and visibility conditions under night VFR operations so that the State of Montana has not protested with respect to their decommissioning.

Each specific site of an off-airport airway beacon in Montana will be reviewed by the State Aeronautics Commission from time to time and a determination made as to their continuing value as an aid in VFR night operations.

There are, at this time, numerous airports in the State of Montana that are not equipped for night operations, having available neither an airport beacon nor runway lights.

The Montana Aeronautics Commission proposes therefore, to act as the sole receiver for surplus decommissioned FAA airway beacons in the State of Montana. Cities, counties and airport boards or authorities, desiring to install such a facility as an airport beacon, on their airport, should make application to the Montana Aeronautics Commission on the form furnished, submitting this form along with the appropriate resolutions from the governing body of the airport facility making application.

The Montana Aeronautics Commission will then through ordinary State channels, offer contracts and request bids for the disassembly or removal of the beacon light and tower from its present FAA site, and its installation according to plans and specifications drafted by the Montana Aeronautics Commission at the airport site chosen by the municipality making application for this installation on the airport of their jurisdiction.

The municipality will by resolution, agree to supply electrical current and to maintain and operate the airport beacon as a certified "true light" in accordance with the Federal Air Regulations and Technical Standard Order No. TSO-N19 dated June 14, 1951.

Immediately upon receipt of the properly signed resolutions from the municipality involved, the Montana Aeronautics Commission will proceed with the contract for the relocation of the airway beacon to the airport beacon site.

It has been determined that maintenance and operations of an airport beacon installation is not a costly operation. The total expenditures for maintenance and operations will be well controlled to a minimum inasmuch as not over one airport beacon will be installed for any one airport board or municipality.

Should further information be needed relative to the airway beacon relocation program of the Montana Aeronautics Commission, please write direct to The Commission, P. O. Box 1698, Helena, Montana.

MONTANA AVIATION TRADES ASSOCIATION

Dear MATA Member:

YES! We are going to have our Annual Meeting! The beautiful new Yogo Inn at Lewistown has been chosen for the site and Bill Rogers, Central Air Service, "drafted" for convention chairman, has already gotten things stirring in preparation for this convention.

We have planned a fast moving meeting with a program to fit all general aviation interests and still time too for relaxation. Our "piece de resistance" will be our banquet speaker, Lt. Governor Ted James, reporting on the legislative highlights of this 39th session.

Mark your calendar for Thursday and Friday, February 25th and 26th!

Make your reservations at the Yogo Inn!

File your flight plan for Lewistown, Montana!

We would like to extend a very hearty invitation to all IATA members and do hope many of you will plan to attend.

More later,
Bittie Herrin
Executive Secretary
Montana Aviatior Trades Association

Members of the Montana Pilots Association, Flying Farmers and 99's are cordially invited to attend.

MONTANA PILOT FLIGHT PLAN SERVICE

Jan. 1964 through Dec. 31, 1964

Flight Service Station	Calls
Billings	94
Bozeman/Belgrade	54
Butte	57
Cut Bank	45
Dillon	75
Great Falls	361
Helena	17
Lewistown	21
Livingston	31
Miles City	865
Missoula	741
TOTAL	2,361

Average cost for above 12 month period—78 cents per call.

Average cost from April 1963 through December 31, 1964—76 cents per call.

PLAN YOUR FLIGHT
FILE YOUR FLIGHT PLAN
FLY YOUR PLAN
CLOSE YOUR PLAN!!!!

Members of the technical staff, left to right: William Korizek, local supervisor of the program; Gordon Fillinger, manager of the Helena office Montana State Employment Service; Val Matross, Supervisor, MDTA program, Department of Public Instruction; Carl Nordberg, Selection and Referral Officer, local office of the Montana State Employment Service.

The program is guided and assisted by a Technical Advisory Committee consisting of:

Clarence Anthony — President, Montana Aeronautics Commission.

Jack Wilson—Secretary, Montana Aeronautics Commission.

Ben Stewart—Frontier Airlines, Chief Pilot.

Marshall Fitzgerald — Montana School Board.

Stan Cavill—Western Airlines.

Consultants to this committee are:

Gordon Fillinger, Montana State Employment Service Manager, Helena local office.

Val Matross, Department of Public Instruction Supervisor—ARA/MDTA.

W. A. Korizek, Helena Public Schools.

Art Kurth, Federal Aviation Agency, Helena.

Charles Lynch, Director, Montana Aeronautics Commission.

William Korizek, Director of Vocational Education, Helena Public schools is the local supervisor of the program.

Instructors are:

Flight School

Jeff Morrison, Chief Flight Instructor.

Howard Raefield

Bruce Jordan

Gail Keilman

Ground School

Don Monforton

BUYING A USED AIRCRAFT

Shopping for a good, used airplane is no different than shoping for a good used car. And if you are not cautious, you could end up with a full-blown aeronautical lemon.

The exaggerated sales pitches which plague the used car market have their aerial counterparts. A used airplane buyer cannot depend solely on such sales slogans as "low time, always hangared, never cracked, owned and maintained by a meticulous A&P mechanic." Don't depend on a previous periodic or 100-hour inspection, either. It may be 99 hours old, providing no assurance of being valid now.

A good way to avoid possible misrepresentations is to obtain the services of a qualified, disinterested A&P mechanic to inspect the used airplane thoroughly before you buy. But before calling in the expert, you can check a number of items yourself. Some things to look for are:

*General appearance to determine if airplane has been in an accident.

*Cracked or broken cooling fins on cylinders of aircooled engines.

*Bolts that hold the engine to fuselage should be secure and free from rust or corrosion.

*Oil, hydraulic or fuel leaks.

*Fuselage skin. If metal, look for buckling and corrosion. A wrinkle may indicate internal damage. If fabric, make sure it is tight and smooth and not deteriorating.

*Look for nicked or cracked propeller blades. Pull the prop through to check compression. If it pulls through too easily, the compression is probably low. (Before you touch the prop, be sure the switch is off. As a further precaution, always handle it as though it is a "hot prop.")

*Check tires for bald spots and obvious damage.

*See if landing gear struts are about the same size, undamaged by hard landings.

*Check the paper work. Make sure that maintenance logs are current and complete.

If your own inspection proves satisfactory, call in an A&P mechanic with a thorough knowledge of the type of aircraft you are interested in. Then, if you are satisfied with his findings, take a test flight to determine the airplane's handling characteristics and proper operation of all equipment in the air.

It's a good idea to conduct a title search to determine that there are no encumbrances such as liens, chattel mortgages or other unsatisfied claims against the aircraft.

You can conduct this title search yourself or obtain the services of a title-searching company. All pertinent aircraft public records are maintained by the FAA at its Aircraft Registration Branch (AC-350) FAA—Aeronautical Center—P. O. Box 1082—Oklahoma City, Oklahoma—73101.

When the deal is closed, the buyer should receive most of the following documents for his used (or new) aircraft:

*Bill of Sale.

*Airworthiness Certificate (FAA Form 1362B).

*All logbooks, aircraft and engine records.

*Equipment list.

*Weight and balance data.

*Maintenance Manual, Service letters, bulletins, etc.

*Airplane Flight Manual or operating limitations.

As the new registered owner of an aircraft, you assume certain responsibilities. You must:

*Have a Registration Certificate and a current Airworthiness Certificate appropriately displayed in the aircraft.

*Maintain the airplane in an airworthy condition.

*Assure that maintenance work is properly recorded.

*Keep abreast of current regulations.

*Notify the FAA, Aircraft Registration Branch, immediately of any change of permanent mailing address or of the sale or export of the aircraft.

*Before buying an amateur-built, experimental or a military surplus aircraft, the prospective buyer should consult his local FAA inspector first. This could prevent useless purchases of airplanes which do not meet FAA certification requirements or which require unusually large sums of money for modifications to meet the necessary standards. Certain military surplus aircraft are not eligible for FAA certification in the Standard, Restricted or Limited classifications.

*And whatever your intended purchase, be certain to visit your local FAA inspector. He may save you time and grief.

*Know your dealer and understand your warranty agreement.

WESTERN REGION AIRWAY BEACONS

The Federal Aviation Agency has conducted a study of 154 airway beacon lights in the Western region. Their statement under Case No. 64-WE-270-NR proposes the discontinuance of 124 of these airway beacon lights as not justified for continuance as a navigational aid. Specific information as to the actual use being made of the individual airway beacon light sites is now being requested. Statements which are to be routed to the Chief Airspace Utilization Branch prior to February 12, 1965, will have to indicate the unique need for the airway beacon light that cannot be served by radio navigation aids and the actual number of VFR flights utilizing the airway beacon light for night navigation indicating the totals for both non-radio and radio equipped aircraft and the basis used in determining the amount of activity.

The list of beacon sites attached to the directive includes 80 per cent of all the airway beacon lights in the States of California, Arizona, Nevada, Utah, Oregon, Washington, Idaho and Wyoming.

COMMENT: As goes the Central Region so goes the Western Region.

FAA DESIGNATES TWO GALLATIN FIELD INSTRUCTORS NEW PILOT EXAMINERS

The Federal Aviation Agency designated David Stradley of Gallatin Flying Service, Inc. and Robert A. Winterowd of Flight Line, Inc. Pilot Examiners as of January, 1965.

David Stradley was born in Colburn, Idaho, attended schools in Belgrade, Montana and obtained his BS Degree from Montana State College in Bozeman. Dave presently holds a Commercial License with Instrument Rating, Flight Instructor Airplanes and Instrument and Ground Instructor Basic. Dave was a graduate of MAC's First Montana Flight Instructor's Course in 1962 and participated on the 1964 course as a Flight Instructor.

David Stradley

Dave has been associated with his father, Jim Stradley in the operation of Gallatin Flying Service since 1950. He is an active member of the MATA in addition to other civic and aviation organizations.

Though flying is his business, Dave still rates it high on his hobby list. Dave and his wife Peggy reside in Belgrade.

Robert A. Winterowd, was born in Brainerd, Minnesota and attended Minnesota schools.

Bob joined the staff of Flight Line, Inc. owned and operated by Al Newby, over 8 years ago. Bob presently holds a Commercial License, Single and Multi-Engine with Instrument Rating, Flight Instructor Airplanes and Instrument.

Bob is a graduate of the MAC's Flight Instructor Course held in 1962.

Bob has been an active member of the Army Reserve for the past 6½ years.

Bob, his wife Ruth, reside in Belgrade with their two daughters, Tammy, 6½ and Joy, 2 years and young son, Allen.

Robert A. Winterowd

MONTANA FLYING FARMERS AND RANCHERS FLY-IN AND BOWL

Montana Flying Farmers and Ranchers held a fly-in to Conrad on January 16th and enjoyed an afternoon of bowling. Queen Eleanor Greening reports that the flying weather was CAVU all the way. President Earl Keister, Mrs. Keister, and Mr. and Mrs. Howard Orcutt were hosts for the afternoon event. The majority of participants stayed to enjoy dinner and an evening of dancing. A grand time was had by all.

MONTANA TOWER CONTROLLED AIRPORT OPERATIONS

TOWER OPERATIONS

DECEMBER, 1964

	Total Operations	Instrument Operations
Great Falls	5,892	632
Billings	4,691	763
Helena	2,055	202
Missoula	1,869	202

A CASE IN POINT

By Charles A. Smith
Commission Attorney

"SAFETY VIOLATION, CARELESS AND RECKLESS OPERATION OF AIRCRAFT"

Defendant, a private pilot, carried a passenger in his Ercoupe, on a non-commercial flight to Point A and returned to the point B airport. After landing the defendant taxied the aircraft to a tie-down area and, without turning off the aircraft's engine, halted the aircraft, so that the passenger, carrying a flashlight, could dismount and turn on the headlights of the passenger's parked automobile in order to locate the tie-down stake. The shortest course from the aircraft to the automobile was forward over the wing of the aircraft. The passenger dismounted, jumping forward from the leading edge of the aircraft's low wing, and into the spinning propeller. The examiner concluded: "The passenger was injured fatally as the result of the said dismounting wherein he entered the track of the turning propeller, but that the defendant was not operating the said aircraft after it had come to rest at the end of the flight within the meaning of Section 60.12 of the Civil Air Regulation, nor was he as a private pilot on a non-commercial flight careless or reckless upon all the facts within the meaning of the said Section, because, while it would have been better practice to shut off the airplane engine, he had no reason to anticipate the accident nor any **absolute** duty to prevent it."

Accordingly, the examiner directed that the administrator's order suspending respondent's airman's certificate for ninety days be reversed.

On review, the Civil Aeronautics Board concluded that defendant's failure to turn the engine off before allowing the passenger to dismount did not **per se** constitute careless operation of the aircraft within the meaning of Section 60.12.

The only additional factors in this case tending to establish carless operation were the circumstances that, it was dark enough to require automobile lights for tying down the airplane and the defendant's testimony that he was aware of the danger the propeller presented. On the other hand, the following circumstances were considered by the CAB: that there was a bright moon and the passenger was carrying a flashlight; that the defendant held only a private pilot certificate and was not carrying the passenger in an operation for hire; that the passenger had been advised on previous "occasions" concerning the correct way to disembark from the airplane; that the passenger had an opportunity himself to observe signs on the wing which told him to dismount to the rear and not to step on the forward part of the wing surface; that defendant did attempt to warn his passenger, although too late.

Upon consideration of all the facts and circumstances set forth above, the Civil Aeronautics Board concluded that the record did not establish by a preponderance of the evidence that defendant operated the aircraft in a careless manner in violation of Section 60.12 and therefore affirmed the examiner's order.

WEATHER BUREAU STUDY FOR GENERAL AVIATION

The U.S. Weather Bureau has contracted with the Flight Safety Foundation to study the problems of effective use of Gov't. aviation weather services. Purpose of the study is to identify those weather parameters and conditions which have a significant effect on the safe conduct of flight by the general aviation pilots; and to formulate improved procedures that can be followed by general aviation pilots for making the most effective use of Government aviation weather services. The study is expected to be completed by May 31, 1965.

FEDERAL AVIATION AGENCY ITINERARY LISTING

Airport	Feb.	March
Bozeman (Gallatin Field)		11
Culbertson	10	
Glasgow		10
Glendive	24	
Great Falls (International)	4	4
Miles City (Municipal)		24
Missoula	18	18
Sidney		25

NOTE: Provisions have been made to give private pilot written examinations **on an appointment basis only** at the following FAA Flight Service Stations:

Bozeman	Lewistown
Butte	Livingston
Cut Bank	Miles City
Dillon	Missoula

AG AIRCRAFT REGISTRATION PROCEDURE REMINDER

In addition to the $1.00 Aircraft Registration fee to be submitted with the new 1965 Ag. Aircraft application form, the following requirements are to be complied with for aircraft used in spray operation.

1. Aircraft will currently be covered by Public Liability and property damage insurance in the amount of $25,000/$50,000 and $25,000.
2. Certificate of Waiver of Authorization Form FAA 663.
3. Registration Certificate FAA Form ACA 500 will be in order and in the aircraft.
4. Certificate of Air Worthiness FAA Form ACA 1362 will be current and in the aircraft.
5. Current weight and balance as required will be in the aircraft.
6. Operations Iimitation FAA Form 309 or FAA approved Manual will be in the aircraft.

NOTE: Requirement No. 1 (Insurance coverage) does not have to be complied with if an individual is spraying his **OWN PERSONAL PROPERTY—ONLY.**

Please contact the Montana Aeronautics Commission—P. O. Box 1699—for application forms and questions regarding your aircraft registration.

LOCAL SERVICE CARRIER 2 YEAR COMPARISON DATA

AVERAGE DAILY PASSENGERS ORIGINATED

FRONTIER AIRLINES, INC.

Authorized Point	12 Months Ended Sept. 30, 1963	12 Months Ended Sept. 30, 1964	% of Increase
Billings	31.35	42.08	34%
Glasgow	3.92	5.02	28
Glendive	1.60	2.06	26
Havre	1.79	2.40	34
Lewistown	2.23	2.54	14
Miles City	2.49	3.08	25
Sidney	3.59	3.62	01
Wolf Point	1.84	2.07	10

WEST COAST AIRLINES, INC.

Great Falls	3.66	5.17	42
Kalispell	5.55	6.89	24

WANTED: Experienced spray pilots and mechanics. Opportunity to have own flying operation—Contact: Walter Huffman—Skyflight, Inc., Big Timber, Montana.

AVIATION EDUCATION NOTEBOOK

By Mary Jo Janey

Last summer at Western Montana College of Education in Dillon, a new departure in aviation courses for teachers was attempted. It was called a Ground School Instructors Course, as the main objective of the project was to begin to provide a backlog of qualified teachers who could teach ground school or aviation science to high school people.

For many years, a few high schools in Montana, never more than two or three at a time, that offered an elective course in aviation or pre-flight aeronautics just "happened" to have someone on the staff whose interest or background in aviation fitted him to teach such a course.

It became apparent that widespread acceptance of aviation science at high school level depended upon two things: (1) a good course plan, academically acceptable and meeting accrediting standards, and (2) qualified, current instructors, in large enough numbers to be rather easily available.

Two lines of action presented themselves. First, to provide the instructors, it was thought that since every school offers science courses taught by accredited science teachers, and since aviation primarily relates to the science-mathematics areas more so than to any other curricular areas, it would be relatively simple to tailor an intensive ground school instructors' course for science teachers who already would have extensive related knowledge of the physics and math involved. Such a course was outlined and given at Western Montana College of Education, as mentioned, for two hard weeks in 1964. Teachers taking the couse were given four college credits for their work. Three out of seven passed the FAA Basic Ground Instructor Exam the first time they took it. The second line of action was to form a committee of teachers from that class to construct a curriculum, or course, guide in aviation science, which would be educationally sound and acceptable to schools. I would like to note here that a variety of textbooks available in this field are in extremely short supply. The best ones are aimed at adults in concentrated form. Others have various axes to grind, but nowhere that we've been able to find does there exist a book written for high school text purposes that is comprehensive enough or in proper usable form, and that is up-to-date in content. The two which come closest are the FAA's **Private Pilot Handbook** and University of Illinois **Fundamentals of Aviation and Space Technology.** The teacher committee was formed and has met twice, with one more meeting to go to finish its work. The course this committee has come up with will fit the criteria established for it. It will be printed and made available to any high school in the State that wishes to offer such a course, using science or math teachers as instructors.

Furthermore, since the course last summer was so successful it will be repeated this year with doubled enrollment and expanded from two weeks to three.

There is evidence of success already, with Powder River High School (Broadus) offering an aviation science class the first semester of the present school year, and Great Falls High School launching one the second semester. A like course will begin at Bainville and Glasgow High School offered a course the first semester for the second time. There are many reasons why schools should make classes of this type available to their students, not the least of which is student interest. Let us hope that many more schools will follow the examples set for them.

A SUGGESTION TO AVIATION PROMOTERS:

If your group has been wondering what it could do to promote aviation education in your locale, here is one suggestion.

The National Aerospace Education Council offers a service to schools, teachers and school libraries which furnishes them with excellent teaching materials, ideas for use in classrooms, and the latest information in aviation developments for $10.00 per year. It would be difficult to place a dollar value on the materials themselves, which come in nine monthly mailings and this nominal cost of $10.00 barely covers mailing.

Budgets being what they are, many teachers and schools in our state do not receive this service. Your group could place one or more in each school which would be extremely valuable.

Further information may be obtained by writing to: National Aerospace Education Council, 1025 Connecticut Ave., N. W., Washington, D.C. 20036.

"STATISTICS"

Webster says, "the science of the collection and classification of facts on the basis of relative number or occurence is a ground for induction; systematic compilation of instances for the inference of general truths; the doctrine of frequency distribution."

Popular interpretation says that statistics can be documented in various ways so as to give a "slant" to a particular problem, and consequently the statistics usually reflect the impressions or desires of the statistician.

The following however, are not that picturesque, they do not prove anything nor are they anything other than ugly, in fact, they are nothing more than cold bold facts.

1963

Total aircraft accidents reported to the two FAA District Offices in Montana	58
Total accidents involving fatalities	9
Total aircraft demolished	13
Total fatalities	17

1964

Total aircraft accidents	61
Total accidents involving fatalities	14
Total aircraft demolished	17
Total fatalities	37

Of the 61 accidents, 2 were military, 1 air carrier and 58 general aviation. Of the 58 general aviation, 3 were multi-engine, 55 were single engine. Of the 37 fatalities, 8 involved military operations, 5 involved air carrier operations and 24 with general aviation operations. 5 of the accidents involved 4 or more fatalities at one time.

Remember . . . . In 1965 there is only one man ultimately concerned and irrevocably responsible for your safety . . . . YOU!

KALISPELL—TVOR

Under date of January 11, the office of the Commission had been advised that approval to proceed with a TVOR for Kalispell, Montana has been received by the Regional Office, FAA in Kansas City. This brings to the point of accomplishment a long number of years of work and effort on the part of the community, the Flathead Airport County Board, the State, the FAA at Regional level and the air carrier involved, for the accomplishment of this important facilities and equipment project. Among the principal F & E projects under date of January 10, 1965, as they ap-

ply to Montana are the following:

VORTAC Conversions:
Butte, October 1965
Cut Bank, May 1965
Helena, June 1965
Lewistown—completed January 6, 1965

Established TVOR
Kalispell, November 1965

Relocate ATC Towers
Great Falls, September 1966

VHF/UHF-DF
Billings, February, 1965
Butte, December, 1965
Great Falls, February, 1965
Miles City, February, 1965
Missoula, August, 1966

The above memorandum did not indicate that the installations of the VHF/UHF-DF equipment had been completed at Billings and Miles City, Montana, as indicated in "Montana and the Sky", for January, 1965.

MAC EMPLOYEE TO WED

In keeping with our "Know Your Commission" policy we announce that that Joyce McKenzie, MAC clerk-steno left our staff on January 29, as she will become Mrs. James Taylor on February 5.

Joyce has been employed at the Commission office since November, 1962 and Jim is presently employed in the Helena Tower, recently having received his 10 year pin from the FAA.

The bride and groom to be—Joyce McKenzie and Jim Taylor.

Joyce was feted at a bridal shower on January 28 by the MAC staff, staff wives, tower personnel wives and airport acquaintances.

We will miss Joyce and her sunny disposition but wish them both the very best. Joyce and Jim will reside at 804 Logan in Helena.

FEDERAL AVIATION AGENCY INSTRUMENT PILOT EXAM-O-GRAM NO. 8

Minimum IFR Altitudes

Applicants for the Instrument Pilot written examination should expect to be examined on the various minimum altitude designations related to instument flight. Analysis of responses to current written examinations indicates that doubt exists as to the meaning of these designations and why they are specified.

General

Minimum IFR altitudes are established by the Administrator of the FAA for instrument flight along Federal Airways and off routes in controlled airspace. They are established after consideration of:

1. obstruction clearance criteria,
2. navigational signal coverage for accurate navigation, and
3. two-way radio communications.

Obstruction clearance is normally at least 1,000 feet (2,000 feet in designated mountainous areas) above the highest terrain 5 miles either side of the centerline of the airway or route.

For instrument flight along routes NOT in controlled airspace and for which no specific minimum IFR altitude has been established, it is the **Pilot's** responsibility to select altitudes which comply with obstruction clearance requirements.

Definitions

1. MEA (**M**inimum **E**nroute **A**ltitude) is the minimum altitude in effect between radio fixes, which
   a. meets obstruction clearance requirements, and
   b. ensures acceptable navigational signal coverage for accute navigation.

   Remember that the MEA is often higher than is required for obstruction clearance in order to ensure reception of navigation and communication signals. Remember also that the MEA is sometimes different for opposite directions along an airway or route segment, due to rising or lowering terrain.

2. MOCA (**M**inimum **O**bstruction **C**learance **A**ltitude) is the specified minimum altitude in effect between radio fixes, which
   a. meets obstruction clearance requirements, and
   b. ensures acceptable navigational signal coverage **only** within 22 nautical miles of the VOR.

   A MOCA is shown (on U. S. Coast and Geodetic Survey IFR charts) directly below the MEA and is identified by an asterisk. The designation of a MOCA indicates that a higher MEA has been established for that particular airway or segment because of signal reception requirements.

   Remember that the MOCA may be requested by a pilot, or assigned by ATC for traffic control purposes, for use within 22 nautical miles of the VOR. Beyond this 22 nautical mile area, the MOCA ensures **only** obstruction clearance.

3. MRA (**M**inimum **R**epection **A**ltitude) is the lowest altitude at which accurate determination of position at a specified intersection can be made. Reception from the radio facilities used to establish an intersection may be inadequate at the lowest MEA; in such a case an MRA is designated for that intersection.

4. MCA (**M**inimum **C**rossing **A**ltitude) is the minimum altitude at which certain radio facilities or intersections must be crossed in specified directions of flight. If a normal climb. commenced immediately after passing a fix beyond which a higher MEA applies, would **not ensure** adequate obstruction clearance, an MCA is specified. The MCA at certain radio facilities could be lower for a departing aircraft than for an enroute aircraft; such a lower MCA would not be shown on an Enroute Chart but might be received in an IFR clearance.

Try This Test

(Correct answers are given following the questions).

1. The MEA ensures acceptable navigational signals for accurate navigation and ————————.

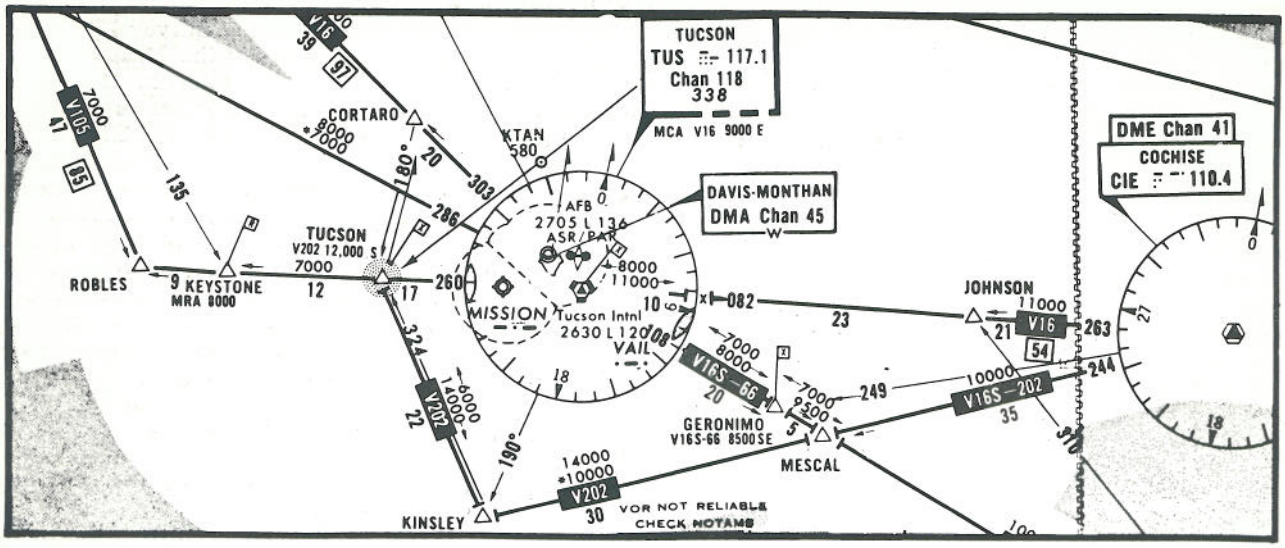
2. If the MOCA does not ensure reliable navigational signal coverage between fixes, a higher altitude is designated as the ————————.

3. MRA's are designated at certain intersections where aircraft position cannot be determined accurately at the ————————.

4. The lowest latitude for crossing a radio fix beyond which a higher minimum applies (if no minimum crossing altitude is specified) is the ————————.

5. Different MEA's for opposite directions of flight along an airway are sometimes specified due to ———— ————————.

A portion of Chart L-4 (August 1963), is reproduced below for answering questions 6 through 10.



6. A Flight on V105 (west of TUS VORTAC) may not be able to determine position over KEYSTONE at an altitude below ————————.

7. An enroute flight approaching TUS and proceeding east on V16 must cross the TUS VORTAC at or above ————————.

8. The MOCA on V202 between KINSLEY AND MESCAL is ————.

9. A southeastbound flight in V66 must cross GERONIMO at or above. ————————.

10. A northwestbound flight on this airway may cross GERONIMO at a minimum altitude of ————.

11. Acceptable navigational signal coverage at the MOCA is ensured for a distance from the VOR of only ————————.

12. For flight outside controlled airspace, the responsibility for determining the minimum IFR altitude rests with the ————————.

13. In what areas may ATC assign the MOCA to an IFR flight? ————.

14. When or why would ATC assign the MOCA? ————————.

15. The minimum IFR altitude for "VFR Conditions on TOP" operation, except in an emergency, is the ———— ————————.

Answers to Questions:

1. Obstruction clearance requirements.
2. MEA
3. MEA
4. MEA at which the fix is approached.
5. Rising or lowering terrain.
6. 8,000 feet.
7. 9,000 feet.
8. 10,000 feet.
9. 8,500 feet.
10. 7,000 feet.
11. 22 nmi.
12. pilot.
13. Only within 22 nmi. of a VOR.
14. For traffic control purposes, or at pilot's request.
15. MEA, or published MOCA within 22 nmi or a VOR

CONGRATULATIONS!

CERTIFICATES ISSUED RECENTLY TO MONTANA FLYERS

Kelly, Charles A., Canoga Pk, Calif.—Private
Stanton, Leroy W., Great Falls—Advanced Ground Instructor
Green, Roger L., Murphysboro, Ill.—Student
Fowler, Clark W., Helena—Student
Kruger, Peggy Dean, Cut Bank—Student
Day, Gerald Sherman, Dillon—Student
Mertzig, Louis C., Jr., Anaconda—Student
Maronick, Edward Phillip, Jr., Helena—Student
Kayne, Victoria G., Great Falls—Student
Laubach, Dennis G., Power—Student
Risley, Kenneth A., Fairfield—Student
Rolczynski, David J., Missoula—Student
Kent, Rodger Neil, Ennis—Student
McDaniel, William F., Helena—Student
McDowell, Blake J., Chester—Student
Leavitt, Glen Dayton, Missoula—Private
Turk, William A., Missoula—Student
Heliker, Geo. B., Missoula—Student
Dennis, Bedford W., Lubbock, Texas—Student
Monforton, Donald P., Bozeman—Advanced Ground Inst.
Tice, Gordon P., Great Falls—Private
Orgin, Rodney Frank, Great Falls—Private
Little, Bruce W., Great Falls—Student
McLaren, Douglas Carl., Missoula—Student
Jones, Roger E., Helena—Student
Irvin, Richard W., Bozeman—Student
Sullivan, Barry J., Wallaceburg, Ontario—Private
Williamson, Charles R., Havre—Student
Hill, Roger E., Missoula—Student
Dilley, Raymond G., St. Johnsbury, Vermont—Student
Henderson, Mason E., Missoula—Student
Terrel, Douglas, Rawlins, Wyoming—Student
Klein, George William, Missoula—Private
Butler, Jules F., Ennis—Flt. Inst.

Westlake, Edward H., Bozeman—Private
Caldwell, Michael K., Billings—Private
Jenkins, Leonard V., Billings—Comm. and Adv. Ground Inst.
Whisennand, Jerry Lee, Nashua—Student
Dick, Marvin, Frazer—Student
Keefer, Craig A., W. Yellowstone—Private
Bates, Thomas A., Helena—Private
Abercrombie, Robert C., Student
Roberts, Edward, Great Falls—Commercial
Roper, Harold J., Denton—Student
Johnson, John A., Lewistown—Flt. Instructor
Cobb, Leola Alice, Billings—Student
Graff, Oran C., Scobey—Student
Field, Lawrence H., Billings—Student
Vanover, David W., Billings—Student
Edlund, Dale L., Billings—Student
Fretty, Donald L., Minot, N.D.—Instr, on Comm.
Stinson, James E., Billings—Student
Ronning, Warren E., Rock Springs—Student
Johnson, Kermit D., Plentywood—Student
Keller, Francis E., Miles City—Student
Long, John D., Billings—Student
Bornheim, Edwin A., Lewistown—Private
Long, Duane Earl, Billings—Student
Walker, Dean B., Lovell, Wyo.—Commercial
Brogan, Michael M., Billings—MEL on Comm.
Shellerud, Lee W., Richland—Blue Seal on Private

CALENDAR

February 6, Helena—Civil Air Patrol Award Banquet to be held at the Placer Hotel. Incentive Awards will be given to cadet members of the CAP. Ray J. Wayrynen, Speaker of the House for the 1965 Legislative Assembly, special guest. Colonel George Budway, Commander Malmstrom AFB, will be principal speaker and Representative John C. Sheehy will be Master of Ceremonies.

February 10, Helena—Montana Aeronautics Commission monthly meeting.

February 25 & 26, Lewistown—Montana Aviation Trades Association annual convention, to be held at the YOGO INN. Invitation is extended to all members of the Montana Pilot's Association, Flying Farmers and the Women's 99's.

May 8—Spokane, Washington—Dedication Ceremony of the new air terminal at Spokane International Airport. 2:00 P.M. Saturday. (Watch for further details.)

May 26, 27 and 28, Nassau Bahamas—The 15th All Women's International Air Race. Sponsored by the Bahamas Ministry of Tourism with the Florida Women Pilots Association directing. For additional information contact Mrs. Vera Brantz, Race Chairman, 1840 S. W. 85th Avenue, Miami, Florida.

June 12—West Yellowstone—Dedication of Yellowstone Airport and the inaugural flight of Western Airlines scheduled service. (Watch for further details.)

July 24—Montana—The Second "Big Sky Race" sponsored by the Montana 99's. Open to all women pilots. (Watch for further details.)

October 11-13—Norman, Oklahoma—The National Airports Conference to be held at the center for Continuing Education University, University of Oklahoma. The conference is held under the joint sponsorship of the University of Oklahoma and the American Association of Airport Executives with the active support of the FAA. Persons, in all segments of the Aviation Industry, should endeavor to participate in this national conference.

WANTED: Commercial Flight Instructor—Personable young man interested in Fix Base Type of flying—This is a permanent job—must like flight instruction—Write full particulars to Miles City Aero Service, Inc., Box 656, Miles City, Montana or Phone: 232-1354.

FOR SALE: Aeronca Sprayer—Fiberglass—70 gal. belly tank—135 Lyc.—licensed part 8 only. Aeronca Sprayer, Sorensen 90 gal. Belly Tank—115 Lyc. licensed Std. and Restricted. Contact: Flight Line, Inc., Belgrade, Montana or Phone: 388-6723.

FOR SALE: Cessna 182—1957 model—940 hrs. total time. Less than 100 hrs. on complete major including prop—Full panel—rotating beacon—Superhomer and low freq. receiver. Good oversize tires—Sharp looking and exceptional condition throughout—Price: $9,995.00. Contact: Jack Bell, 121 E. Main, Cut Bank, Montana, or Phone: 938-4115.

AIRPORT NOTES

By James H. Monger
Assistant Director, Airports

New Yellowstone Airport

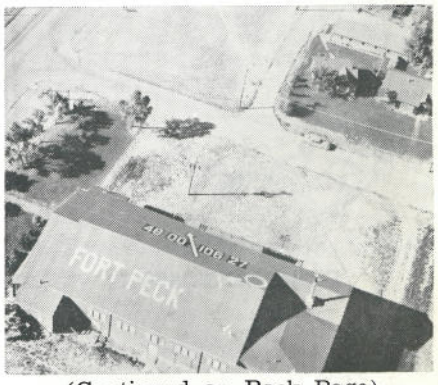
The construction phase at the new Yellowstone Airport in West Yellowstone, Montana, is reaching near the point of completion and final negotiations with lessees and tenant operators are being finalized.

All construction on the runways, taxiways, aprons, lighting systems and airport proper were completed by Robert V. Burggraf Company, Inc., of Idaho Falls in October, 1964.

The Terminal Building construction contract by Wallace Diteman, Inc., contractors of Bozeman, Montana, is now nearing the 80 per cent completion point and will be completed prior to the beginning of operations in spring of 1965.

Leases have been completed with Big Sky Aviation, Inc., for a General Aviation operators facility on this new airport. Big Sky Aviation, Inc., is a newly formed corporation of aviation businessmen and interested aviation enthusiasts formed for the purpose of submitting operating proposals for the Yellowstone Airport and includes well-known local personalities and experienced general aviation operators as George Crockett, Alamo Airway, Las Vegas, Nevada; H. P. "Pete" Hill, Idaho Aviation Center, Idaho Falls, Idaho; Robert V. Burggraf, Idaho Falls, Idaho; Martin Rust II, Boise, Idaho; Jeffrey Morrison, Morrison Flying Service, Inc., Helena, Montana; and Dr. J. R. Burgess, Helena, Montana.

1965 Airmarking—Is It Necessary?



(Continued on Back Page)

The Montana Aeronautics Commission is taking a close look at the real need for airmarking in Montana. The program will be discontinued unless you as a pilot consider it a necessity. Please write this office your comments; is there a need for Airmarkers? Should the program be continued or dropped by the Commission? If there is not sufficient support this program will definitely be stopped.

There are 98 forest look-out towers airmarked in the state of Montana. Approximately 20 of these are re-painted each year. In addition 260 roof top markers exist in towers and cities throughout the state. Each year 50 or 60 of these are re-painted or re-located. The roof top airmarker consists of the name of that location, a north arrow, the latitude and longitude, and the direction and distance to the nearest airport. The large letters are painted bright yellow and trimmed in black. The total cost of painting an individual marker by the Montana Aeronautics Commission is averaged at $39.62.

You as a Montana Pilot can assist the Montana Aeronuatics Commission by writing us your comments, either pro or con, on the continuance of the airmarking program in Montana.

This service is for you and the out-of-state pilots. Do you want it?

MAIL TO:

Montana Aeronautics Commission
P. O. Box 1698
Helena, Montana 59601

Re: Airmarking

Please X the appropriate box

I favor the Montana Aeronautics Commission continuing the Airmarking Program. ☐

I consider airmarking unnecessary and request the Montana Aeronautics Commission discontinue the program. ☐

Comments:

Signed:_____

Address:_____

_____

MEMBER
NATIONAL ASSOCIATION OF STATE AVIATION OFFICIALS

PURPOSE:—**"To foster aviation as an industry, as a** mode of transportation for persons and property and as an arm of the national defense; to join with the Federal Government and other groups in **research, development,** and **advancement of aviation;** to develop uniform laws and regulations; and to otherwise encourage co-operation and mutual aid among the several states."

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FEBRUARY, 1965